

Notice of Allowability

Application No.

10/626,471

Examiner

Rodney G. McDonald

Applicant(s)

FELTSMAN, MICHAEL

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 7-8-05.
2. ☒ The allowed claim(s) is/are 1-35.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 9-7-05.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.


RODNEY G. McDONALD
PRIMARY EXAMINER

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Keith Tackett on September 7, 2005.

The application has been amended as follows:

Claim 18, line 4, insert "first" before "window".

Claim 21, line 1, replace "7" with "18" so that claim 21 will depend from claim 18.

The following is an examiner's statement of reasons for allowance:

Claims 1-5 are allowable over the prior art of record because the prior art of record does not teach the claimed shutter disk including the shutter disk having a center pad extending from the lower surface; a recess formed in the center pad coaxially with the disk body and a lip extending from the lower surface proximate the outer edge, the lip extending below the center pad.

Claim 6 is allowable over the prior art of record because the prior art of record does not teach the claimed shutter disk including a center pad extending from the lower surface; a blind hole having outwardly flaring sides formed in the center pad along the center axis of the disk body; a lip extending from the lower surface proximate the outer edge, the lip extending below the center pad to a lip face that is parallel to the center pad; and an annular recess formed in the lower surface between the center pad and lip.

Claims 7-21 are allowable over the prior art of record because the prior art of record does not teach the claimed physical vapor deposition chamber including a disk body having a center axis and defined by an outer edge, a top surface extending to the outer edge and a lower surface disposed opposite the top surface, wherein the lower surface further comprises a center pad extending from the lower surface and a lip extending from the lower surface proximate the outer edge, the lip extending below the center pad; a robot having a blade adapted to move the disk body between the housing and chamber body; and an alignment feature disposed between the center pad and the blade, wherein the alignment feature engages the disk body along the center axis.

Claims 22-30 are allowable over the prior art of record because the prior art of record does not teach the claimed physical vapor deposition chamber including a shutter disk mechanism at least partially disposed in the process volume and having a robot blade and a shutter disk engaged by an alignment feature, the alignment feature disposed along a center axis of the shutter disk, wherein the shutter disk has a lower surface comprising a center pad near the center axis; and a lip extending along an outer edge of the shutter disk and extending below the center pad.

Claims 31 and 32 are allowable over the prior art of record because the prior art of record does not teach the claimed method for positioning a shutter disk including spacing a shutter disk vertically from a substrate support; moving a robot blade between the substrate support and the shutter disk and engaging the shutter disk and the robot blade by coupling a post disposed on the robot blade with an alignment feature disposed along a center axis of the shutter disk.

Claims 33 and 34 are allowable over the prior art of record because the prior art of record does not teach the claimed physical deposition chamber including a shutter disk mechanism at least partially disposed in the process volume and having a robot blade and a shutter disk engaged by an alignment feature, the alignment feature disposed along a center axis of the shutter disk and at least a first sensor disposed adjacent to the housing and orientated to detect the presence of a portion of the shutter disk mechanism within the housing.

Claim 35 is allowable over the prior art of record because the prior art of record does not teach the claimed method for position a shutter disk including engaging the shutter disk and the robot blade with an alignment feature disposed along a center axis of the shutter disk; and setting the shutter disk on a perimeter of the substrate support wherein center portions of the shutter disk and the substrate support remain in a spaced-apart relation.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M- Th with Every other Friday off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rodney G. McDonald
Primary Examiner
Art Unit 1753

RM
September 7, 2005